# Missouri Childhood Lead Poisoning Prevention Program

## Annual Report for Fiscal Year 2012

July 1, 2011 – June 30, 2012

**Missouri Department of Health and Senior Services**
http://health.mo.gov/living/environment/lead/index.php
573-751-6102 or 866-628-9891

# Missouri Childhood Lead Poisoning Prevention Program (CLPPP)

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This report meets the statutory mandate for an annual report per 701.343, RSMo.

# About Our Program

PROGRAM MISSION

The Missouri Department of Health and Senior Services Childhood Lead Poisoning Prevention Program's (CLPPP) mission is to assure the children of Missouri a safe and healthy environment through primary prevention and the identification of lead exposures that may cause illness or death.

The Missouri Department of Health and Senior Services' (DHSS) Childhood Lead Poisoning Prevention Program (CLPPP) was established in 1993 and continues to assure that health care providers have current information and tools available to screen patients six years and younger for lead and provide primary prevention education.

The Childhood Lead Poisoning Prevention Program is staffed by the following positions:
A Program Manager, a Health Educator, a Surveillance Coordinator, two Data Entry Personnel, two Environmental Specialists and two Case Management Nurses.

State guidelines describe appropriate follow-up of children with elevated blood lead levels (EBL) of at least ten micrograms per deciliter (10 µg/dL). The level of concern recommended by the Centers for Disease Control and Prevention (CDC) previously was $\geq$ 10 µg/dL. As of January 2012, CDC established a lower reference value of $\geq$ 5 µg/dL. Through the remainder of FY2012, and to current, CLPPP has been working with partners to identify ways to implement CDC's new recommendation.

Follow-up activities and case management are generally provided for children six years and younger with an EBL $\geq$ 10 µg/dL. These activities help the family understand the causes and health effects of childhood lead poisoning. Environmental risk assessments are conducted to identify potential sources of lead exposure for children with an EBL $\geq$ 15 µg/dL using CLPPP funding. These risk assessments provide the family with information about where lead hazards exist in and around their home. A work plan is developed to reduce these hazards and the risks associated with them. By reducing or eliminating exposures to the environmental sources of lead, the child's blood lead level should decrease and repeated elevations should be prevented. (Note: Children who receive MO HealthNet benefits must have received two lead tests results of 15 µg/dL or greater at least three months apart for MO HealthNet (Medicaid) to pay for the environmental risk assessment.)

Lead poisoning prevention educational materials are developed and provided to Missouri citizens at various community venues. DHSS works with Local Public Health Agencies (LPHAs), the medical community, other state agencies, businesses, schools and community organizations to prevent childhood lead poisoning. The Missouri CLPPP created a mascot to promote lead poisoning prevention messages. The costume may be loaned to any organization in Missouri wanting to increase lead poisoning prevention education and blood lead testing.

The program currently uses the Missouri Health Strategic Architectures and Information Cooperative (MOHSAIC) database to collect lead-specific data from medical and lead program activities pertaining to children under the age of six years. This database is part of a tracking system to provide documentation of medical testing, case management and environmental risk

assessments statewide. The data is used to provide comprehensive lead case management services and for statistical information. All child and adult lead test information is tracked in MOHSAIC.

# Lead Poisoning in Missouri

Lead poisoning is one of the most common and preventable environmental health problems today. Almost a quarter million children in the United States are estimated to have elevated blood lead levels of at least 10 µg/dL. According to Missouri blood lead testing data for July 1, 2011 through June 30, 2012, there were 728 children under the age of six identified with elevated blood lead levels of at least 10 µg/dL (0.78 percent of the 92,920 children tested that year).

The primary lead hazard to children in Missouri is deteriorated lead-based paint. Lead-based paint was banned for residential use nationwide in 1978. Any home built before 1978 may contain leaded paint. The highest risk of lead exposure for children is found in homes built before 1950, when most paint contained a high percentage of lead. More than 21 percent of the housing stock in Missouri was built before 1950 (see page 5).

Lead mining and smelting are an important part of Missouri's history. Lead in Missouri was first discovered along the Meramec River by French explorers in the 1700s while searching for gold and silver. Missouri became the dominant lead-producing state in the nation in 1907. It has remained so ever since. Most early lead production came from the Old Lead Belt district of southeast Missouri in the Park Hills-Bonne Terre area, and in the Tri-State Zinc-Lead district in southwest Missouri around Joplin. Today, all of the state's lead production comes from the New Lead Belt, also known as the Viburnum Trend district. This district is a very narrow, 35-mile-long ore area extending southward from the small town of Viburnum, Iron County, in southeast Missouri. Mining waste products in these areas often end up on driveways, in yards, or even in children's play areas. Dust, air and soil around mining activity have consistently shown elevated levels of lead contamination.

Lead is a shiny, silver-colored metal found naturally in the earth's crust. Lead has historically been used in a variety of ways including in paints, gasoline, batteries, bullets and some vinyl products such as mini-blinds. Fine particles of processed or recycled lead and/or lead dust become a health hazard when they are taken into the body through inhalation (breathing) and/or ingestion (swallowing).

Lead affects almost every organ and system in the body. The effects are the same whether it is breathed or swallowed. Lead damages the brain, central nervous system, kidneys and immune system. Lead in the human body is most harmful to young children under six years of age. It is especially detrimental to children less than three years of age because their systems are developing rapidly.

A blood test is used to determine lead levels. Lead can be measured in blood drawn from a vein or capillary (finger stick). Blood lead levels are measured and reported as micrograms of lead per deciliter of whole blood (µg/dL).

# Statewide Screening Plan

Legislation passed in 2001 required DHSS to promulgate rules and regulations to establish a statewide screening plan. The rules and regulations define criteria for establishing geographic areas in the state considered to be at higher risk for lead poisoning, outline blood lead testing requirements and protocols, and define lead testing follow-up.

In developing these regulations, CLPPP applied Missouri surveillance and census data to establish criteria for Universal Testing (high risk) and Targeted Testing (non-high risk) areas in Missouri. Based upon those criteria, and as required by state statute, the following activities shall occur in these two areas.

In **Universal Testing Areas**:

- Any child under the age of six living in or visiting for more than 10 hours per week in the Universal Testing or high risk area will be tested annually for lead.
- Childcare facilities located in Universal Testing Areas must record a "proof of lead testing" signed by the health care provider within 30 days of the child's enrollment. The statement must verify that a blood lead test was completed in the previous 12 months. If the parent/guardian does not provide proof or a written statement explaining why they do not want the child tested, the childcare facility is to offer the parent assistance in scheduling a blood lead test.

In **Targeted Testing Areas** the following activities shall occur:

- From six months to six years of age, every child will be screened annually, by verbal risk assessment,* to determine whether they are at high risk for lead poisoning. Risk assessments may indicate the need for blood lead testing at an earlier age (6 months) and/or more frequently.

  *The form used for the verbal risk assessment is the Healthy Children and Youth (HCY) Lead Risk Assessment Guide http://health.mo.gov/living/environment/lead/pdf/HCYLeadRiskAssessmentGuide.pdf .

- Every child less than age six found to be at high risk will be tested for lead poisoning.
- All MO HealthNet eligible children shall be assessed by the HCY Lead Risk Assessment Guide questionnaire and/or be blood lead tested at the ages stipulated by the Federal Program Guidelines (12 months of age, 24 months of age, or 12 to 72 months of age).

An updated Missouri Lead Testing Areas map is published every year and is available at: health.mo.gov/living/environment/lead/maps.php

# Reporting of Blood Lead Testing

Missouri's diseases and conditions reporting rule (19 CSR 20-20.020) requires reporting of all blood lead tests both elevated and non-elevated and clarifies demographic patient information required to be submitted with the report. All blood lead test results are required to be reported to the DHSS regardless of the age of the individual or the reported lead level. The data contributes to Missouri's local, regional and statewide statistics on blood lead poisoning.

The following information is required:

- Test conducted
- Results of the test
- Name and address of the attending physician
- Name of the disease or condition diagnosed or suspected
- Date the test results were obtained
- Patient's complete name and home address with zip code
- Patient's age and date of birth
- Patient's sex and race

Health care providers should assure that the laboratory they are using is reporting to DHSS.

## LeadCare Analyzers

LeadCare Analyzers are portable and easy-to-use instruments that give results of capillary blood lead samples within minutes. These devices allow the patient to receive a result immediately from the tester. LeadCare Analyzers are very convenient for physicians' offices and local health departments. These devices:

- Prevent the patient from possibly being referred to an entirely different location to have the test done.
- Save time that would be spent waiting on lab results.

The use of these instruments has increased for both providers and local public health agencies.

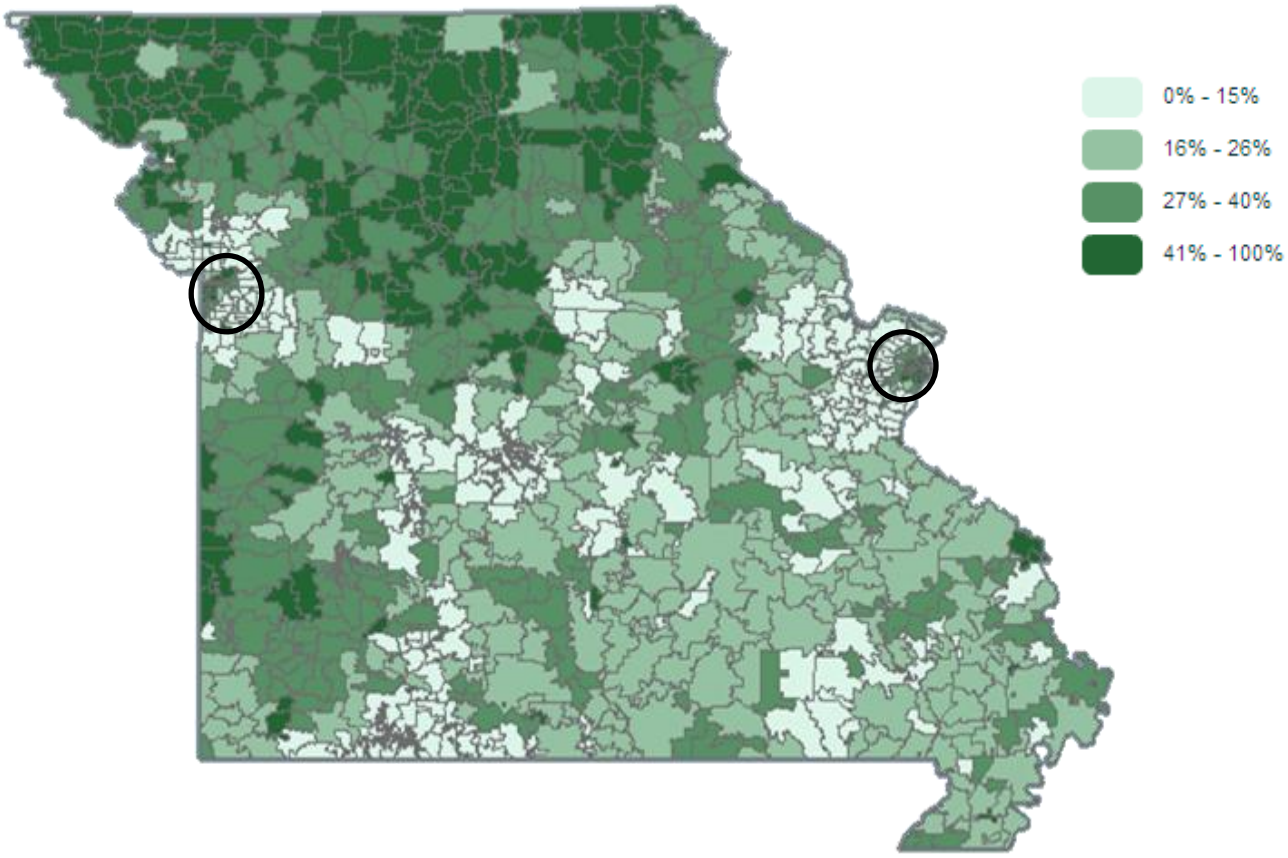
## Filter Paper Blood Lead Testing

Filter Paper techniques are acceptable for blood lead testing if health care providers ensure that, as with all blood lead test methods, the chosen laboratory is participating satisfactorily in Clinical Laboratory Improvement Amendments (CLIA) certified proficiency testing (PT) program. Technical assistance is available by contacting the nurse in the DHSS Childhood Lead Poisoning Prevention Program at 573-751-6102.

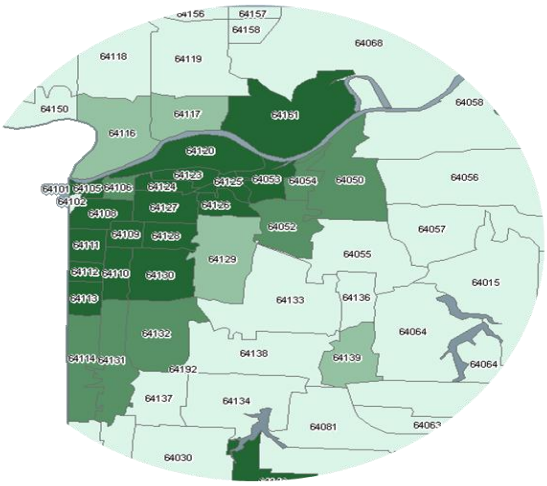
# Housing Risks

Nationally, the average percentage of housing built pre-1950 decreased from 22% in 2000 to 19.6 % in 2010. Missouri is above the national average with 21% of housing units built before 1950. The map below lists the percentage of pre-1950 housing by zip code according to 2000 census data.

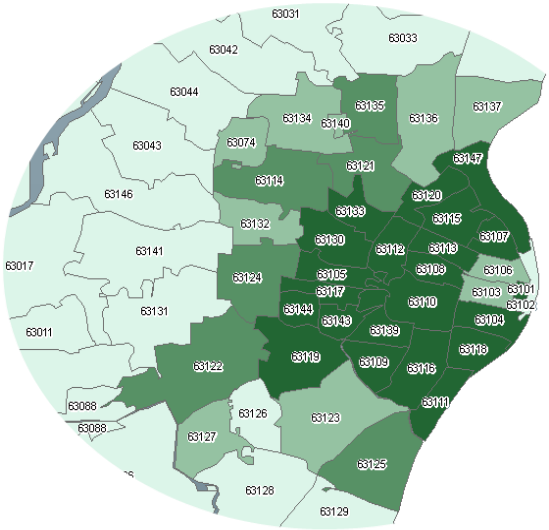
## Percent of Missouri Pre-1950 Housing by Zip Code




**Kansas City**



**St. Louis**



# Testing and Prevalence

The number of Missouri's children less than six years old who have been tested for lead poisoning has increased from 50,362 in 2000 to 92,920 in 2012. Of the children tested, the percentage found to have elevated blood lead levels (10 µg/dL or greater) has declined from 11.1 percent in 2000 to 0.78 percent in 2012. This decrease mirrors a nationwide decrease in children's blood lead levels. In 2012, of the 92,920 children in Missouri who received a blood lead test, 728 had blood lead levels 10 µg/dL or greater.

### Highlights from the FY 2012 testing data

- There were 92,920 children tested for lead during 2012.
- Approximately 31% of children tested in the Universal Testing Areas in 2012 (20,394 of an estimated 64,083 children under age 6 in Universal Testing Areas).
- The number of children found to have an EBL greater than or equal to 10 µg/dL decreased from 5,588 in 2000 to 728 in 2012.
- Of children tested in Missouri, 0.78 percent had an elevated blood lead level of at least 10 µg/dL.
- 4,672 children tested had blood lead levels between 5 and 9.9 µg/dL.

A summary of county level blood lead testing data for the period July 1, 2011 through June 30, 2012 is presented on the following pages.

# Blood Lead Testing Data by County

## For the period of July 1, 2011 through June 30, 2012 for Children Less Than Six Years of Age

| Jurisdiction | Blood Lead Level Test Results (ug/dl) | | | | | | | | | | Total Count All Tests | 2010 Census Population of Children <72 months | Percent of Total Population (<72 months) Tested | Total Count Tests ≥ 10 | Percent Total Tested ≥ 10 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0-2.9 | 3-4.9 | 5-9.9 | Total Tests <10 | 10-14.9 | 15-19.9 | 20-24.9 | 25-44.9 | 45-69.9 | ≥ 70 | | | | | |
| ADAIR | 244 | 50 | 13 | 307 | 1 | 0 | 0 | 0 | 0 | 0 | 308 | 1,715 | 17.96% | 1 | 0.32% |
| ANDREW | 118 | 10 | 14 | 142 | 0 | 1 | 0 | 0 | 0 | 0 | 143 | 1,217 | 11.75% | 1 | 0.70% |
| ATCHISON | 32 | 13 | 8 | 53 | 1 | 0 | 0 | 0 | 0 | 0 | 54 | 362 | 14.92% | 1 | 1.85% |
| AUDRAIN | 380 | 49 | 14 | 443 | 2 | 1 | 0 | 0 | 0 | 0 | 446 | 2,063 | 21.62% | 3 | 0.67% |
| BARRY | 294 | 53 | 13 | 360 | 0 | 0 | 1 | 0 | 0 | 0 | 361 | 2,726 | 13.24% | 1 | 0.28% |
| BARTON | 88 | 25 | 11 | 124 | 0 | 0 | 0 | 0 | 0 | 0 | 124 | 997 | 12.44% | 0 | 0.00% |
| BATES | 303 | 32 | 12 | 347 | 1 | 2 | 0 | 0 | 0 | 0 | 350 | 1,369 | 25.57% | 3 | 0.86% |
| BENTON | 129 | 17 | 6 | 152 | 0 | 0 | 0 | 0 | 0 | 0 | 152 | 1,001 | 15.18% | 0 | 0.00% |
| BOLLINGER | 161 | 35 | 7 | 203 | 0 | 0 | 0 | 0 | 0 | 0 | 203 | 907 | 22.38% | 0 | 0.00% |
| BOONE | 1965 | 81 | 23 | 2,069 | 0 | 0 | 0 | 0 | 0 | 0 | 2,069 | 12,126 | 17.06% | 0 | 0.00% |
| BUCHANAN | 957 | 199 | 144 | 1,300 | 15 | 6 | 6 | 3 | 0 | 0 | 1,330 | 7,321 | 18.17% | 30 | 2.26% |
| BUTLER | 541 | 121 | 24 | 686 | 1 | 2 | 0 | 1 | 0 | 0 | 690 | 3,369 | 20.48% | 4 | 0.58% |
| CALDWELL | 81 | 19 | 15 | 115 | 0 | 1 | 0 | 1 | 0 | 0 | 117 | 722 | 16.20% | 2 | 1.71% |
| CALLAWAY | 393 | 45 | 21 | 459 | 0 | 1 | 0 | 0 | 0 | 0 | 460 | 3,169 | 14.52% | 1 | 0.22% |
| CAMDEN | 191 | 31 | 7 | 229 | 0 | 0 | 0 | 0 | 0 | 0 | 229 | 2,610 | 8.77% | 0 | 0.00% |
| CAPE GIRARDEAU | 579 | 98 | 53 | 730 | 4 | 1 | 0 | 1 | 0 | 0 | 736 | 5,638 | 13.05% | 6 | 0.82% |
| CARROLL | 174 | 25 | 26 | 225 | 3 | 0 | 1 | 1 | 1 | 0 | 231 | 634 | 36.44% | 6 | 2.60% |
| CARTER | 75 | 10 | 3 | 88 | 0 | 0 | 0 | 0 | 0 | 0 | 88 | 515 | 17.09% | 0 | 0.00% |
| CASS | 952 | 87 | 15 | 1,054 | 1 | 0 | 0 | 0 | 0 | 0 | 1,055 | 8,174 | 12.91% | 1 | 0.09% |
| CEDAR | 93 | 19 | 8 | 120 | 0 | 0 | 0 | 0 | 0 | 0 | 120 | 1,002 | 11.98% | 0 | 0.00% |
| CHARITON | 89 | 18 | 6 | 113 | 0 | 0 | 0 | 0 | 0 | 0 | 113 | 575 | 19.65% | 0 | 0.00% |
| CHRISTIAN | 873 | 61 | 14 | 948 | 2 | 0 | 0 | 1 | 0 | 0 | 951 | 7,017 | 13.55% | 3 | 0.32% |
| CLARK | 83 | 12 | 10 | 105 | 0 | 0 | 0 | 0 | 0 | 0 | 105 | 577 | 18.20% | 0 | 0.00% |
| CLAY | 688 | 60 | 17 | 765 | 1 | 0 | 0 | 0 | 0 | 0 | 766 | 19,570 | 3.91% | 1 | 0.13% |
| CLINTON | 168 | 25 | 11 | 204 | 0 | 0 | 0 | 0 | 0 | 0 | 204 | 1,569 | 13.00% | 0 | 0.00% |
| COLE | 632 | 134 | 63 | 829 | 2 | 2 | 1 | 0 | 0 | 0 | 834 | 6,099 | 13.67% | 5 | 0.60% |
| COOPER | 178 | 35 | 12 | 225 | 0 | 0 | 1 | 0 | 0 | 0 | 226 | 1,291 | 17.51% | 1 | 0.44% |
| CRAWFORD | 256 | 49 | 16 | 321 | 1 | 3 | 0 | 0 | 0 | 0 | 325 | 2,000 | 16.25% | 4 | 1.23% |
| DADE | 56 | 12 | 4 | 72 | 0 | 0 | 0 | 0 | 0 | 0 | 72 | 494 | 14.57% | 0 | 0.00% |
| DALLAS | 119 | 20 | 6 | 145 | 1 | 0 | 0 | 0 | 0 | 0 | 146 | 1,368 | 10.67% | 1 | 0.68% |
| DAVIESS | 71 | 19 | 2 | 92 | 0 | 0 | 0 | 0 | 0 | 0 | 92 | 757 | 12.15% | 0 | 0.00% |
| DEKALB | 91 | 13 | 9 | 113 | 0 | 0 | 0 | 0 | 0 | 0 | 113 | 706 | 16.01% | 0 | 0.00% |
| DENT | 199 | 47 | 20 | 266 | 0 | 1 | 0 | 0 | 0 | 0 | 267 | 1,145 | 23.32% | 1 | 0.37% |
| DOUGLAS | 274 | 25 | 10 | 309 | 1 | 0 | 0 | 0 | 0 | 0 | 310 | 983 | 31.54% | 1 | 0.32% |
| DUNKLIN | 471 | 76 | 19 | 566 | 2 | 1 | 0 | 0 | 0 | 0 | 569 | 2,640 | 21.55% | 3 | 0.53% |

| | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| FRANKLIN | 951 | 92 | 29 | 1,072 | 2 | 0 | 0 | 1 | 0 | 0 | 1,075 | 7,862 | 13.67% | 3 | 0.28% |
| GASCONADE | 161 | 37 | 14 | 212 | 1 | 0 | 0 | 0 | 0 | 0 | 213 | 1,009 | 21.11% | 1 | 0.47% |
| GENTRY | 80 | 23 | 16 | 119 | 1 | 0 | 0 | 0 | 0 | 0 | 120 | 542 | 22.14% | 1 | 0.83% |
| GREENE | 2937 | 297 | 87 | 3,321 | 5 | 2 | 3 | 3 | 0 | 0 | 3,334 | 20,451 | 16.30% | 13 | 0.39% |
| GRUNDY | 119 | 24 | 16 | 159 | 1 | 0 | 0 | 0 | 0 | 0 | 160 | 853 | 18.76% | 1 | 0.63% |
| HARRISON | 132 | 20 | 14 | 166 | 2 | 0 | 0 | 0 | 0 | 0 | 168 | 781 | 21.51% | 2 | 1.19% |
| HENRY | 276 | 43 | 12 | 331 | 4 | 1 | 0 | 0 | 0 | 0 | 336 | 1,583 | 21.23% | 5 | 1.49% |
| HICKORY | 66 | 19 | 7 | 92 | 0 | 0 | 0 | 0 | 0 | 0 | 92 | 535 | 17.20% | 0 | 0.00% |
| HOLT | 67 | 13 | 14 | 94 | 0 | 0 | 0 | 0 | 0 | 0 | 94 | 336 | 27.98% | 0 | 0.00% |
| HOWARD | 169 | 37 | 19 | 225 | 1 | 1 | 0 | 0 | 0 | 0 | 227 | 732 | 31.01% | 2 | 0.88% |
| HOWELL | 234 | 210 | 18 | 462 | 0 | 0 | 0 | 0 | 0 | 0 | 462 | 3,389 | 13.63% | 0 | 0.00% |
| IRON | 187 | 80 | 46 | 313 | 6 | 1 | 0 | 1 | 0 | 0 | 321 | 742 | 43.26% | 8 | 2.49% |
| JACKSON | 2641 | 3125 | 102 | 5,868 | 5 | 2 | 2 | 0 | 0 | 0 | 5,877 | 16,328 | 35.99% | 9 | 0.15% |
| JASPER | 1759 | 458 | 246 | 2,463 | 21 | 7 | 5 | 1 | 0 | 0 | 2,497 | 10,727 | 23.28% | 34 | 1.36% |
| JEFFERSON | 1708 | 150 | 40 | 1,898 | 8 | 1 | 0 | 1 | 0 | 0 | 1,908 | 18,009 | 10.59% | 10 | 0.52% |
| JOHNSON | 360 | 77 | 31 | 468 | 3 | 1 | 0 | 0 | 0 | 0 | 472 | 4,267 | 11.06% | 4 | 0.85% |
| KANSAS CITY | 7737 | 1275 | 333 | 9,345 | 47 | 15 | 6 | 7 | 1 | 0 | 9,421 | 40,849 | 23.06% | 76 | 0.81% |
| KNOX | 56 | 15 | 8 | 79 | 1 | 0 | 0 | 0 | 0 | 0 | 80 | 323 | 24.77% | 1 | 1.25% |
| LACLEDE | 439 | 55 | 8 | 502 | 0 | 0 | 0 | 0 | 0 | 0 | 502 | 3,029 | 16.57% | 0 | 0.00% |
| LAFAYETTE | 193 | 243 | 12 | 448 | 2 | 1 | 0 | 0 | 0 | 0 | 451 | 2,511 | 17.96% | 3 | 0.67% |
| LAWRENCE | 439 | 90 | 35 | 564 | 0 | 3 | 1 | 0 | 0 | 0 | 568 | 3,220 | 17.64% | 4 | 0.70% |
| LEWIS | 87 | 35 | 4 | 126 | 0 | 0 | 0 | 0 | 0 | 0 | 126 | 762 | 16.54% | 0 | 0.00% |
| LINCOLN | 515 | 54 | 13 | 582 | 1 | 0 | 0 | 0 | 0 | 0 | 583 | 4,892 | 11.92% | 1 | 0.17% |
| LINN | 99 | 20 | 7 | 126 | 1 | 0 | 0 | 0 | 0 | 0 | 127 | 1,009 | 12.59% | 1 | 0.79% |
| LIVINGSTON | 221 | 29 | 26 | 276 | 1 | 0 | 0 | 0 | 0 | 0 | 277 | 1,127 | 24.58% | 1 | 0.36% |
| MACON | 225 | 42 | 14 | 281 | 1 | 0 | 1 | 1 | 0 | 0 | 284 | 1,266 | 22.43% | 3 | 1.06% |
| MADISON | 198 | 45 | 17 | 260 | 1 | 0 | 1 | 0 | 0 | 0 | 262 | 956 | 27.41% | 2 | 0.76% |
| MARIES | 73 | 21 | 3 | 97 | 0 | 0 | 0 | 0 | 0 | 0 | 97 | 680 | 14.26% | 0 | 0.00% |
| MARION | 515 | 82 | 29 | 626 | 4 | 3 | 1 | 1 | 0 | 0 | 635 | 2,373 | 26.76% | 9 | 1.42% |
| MCDONALD | 317 | 57 | 17 | 391 | 0 | 0 | 0 | 0 | 0 | 0 | 391 | 2,022 | 19.34% | 0 | 0.00% |
| MERCER | 4 | 50 | 5 | 59 | 0 | 0 | 0 | 0 | 0 | 0 | 59 | 314 | 18.79% | 0 | 0.00% |
| MILLER | 204 | 25 | 5 | 234 | 1 | 0 | 0 | 0 | 0 | 0 | 235 | 1,932 | 12.16% | 1 | 0.43% |
| MISSISSIPPI | 358 | 62 | 40 | 460 | 3 | 1 | 0 | 0 | 0 | 0 | 464 | 1,084 | 42.80% | 4 | 0.86% |
| MONITEAU | 145 | 22 | 12 | 179 | 2 | 1 | 0 | 1 | 0 | 0 | 183 | 1,306 | 14.01% | 4 | 2.19% |
| MONROE | 108 | 6 | 5 | 119 | 0 | 0 | 0 | 0 | 0 | 0 | 119 | 658 | 18.09% | 0 | 0.00% |
| MONTGOMERY | 196 | 64 | 29 | 289 | 0 | 0 | 0 | 0 | 0 | 0 | 289 | 920 | 31.41% | 0 | 0.00% |
| MORGAN | 133 | 16 | 9 | 158 | 0 | 0 | 0 | 0 | 0 | 0 | 158 | 1,503 | 10.51% | 0 | 0.00% |
| NEW MADRID | 304 | 34 | 7 | 345 | 0 | 0 | 0 | 0 | 0 | 0 | 345 | 1,507 | 22.89% | 0 | 0.00% |
| NEWTON | 732 | 153 | 88 | 973 | 1 | 0 | 0 | 0 | 0 | 0 | 974 | 4,638 | 21.00% | 1 | 0.10% |
| NODAWAY | 136 | 24 | 10 | 170 | 0 | 0 | 0 | 0 | 0 | 0 | 170 | 1,479 | 11.49% | 0 | 0.00% |
| OREGON | 130 | 62 | 20 | 212 | 0 | 0 | 0 | 0 | 0 | 0 | 212 | 736 | 28.80% | 0 | 0.00% |
| OSAGE | 98 | 26 | 13 | 137 | 0 | 1 | 0 | 0 | 0 | 0 | 138 | 1,095 | 12.60% | 1 | 0.72% |
| OZARK | 87 | 35 | 6 | 128 | 0 | 0 | 0 | 0 | 0 | 0 | 128 | 601 | 21.30% | 0 | 0.00% |

| | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| PEMISCOT | 223 | 38 | 15 | 276 | 2 | 0 | 0 | 0 | 0 | 0 | 278 | 1,674 | 16.61% | 2 | 0.72% |
| PERRY | 98 | 3 | 3 | 104 | 0 | 0 | 0 | 0 | 0 | 0 | 104 | 1,533 | 6.78% | 0 | 0.00% |
| PETTIS | 656 | 111 | 65 | 832 | 3 | 2 | 1 | 0 | 0 | 0 | 838 | 3,739 | 22.41% | 6 | 0.72% |
| PHELPS | 700 | 72 | 14 | 786 | 3 | 1 | 0 | 0 | 0 | 0 | 790 | 3,326 | 23.75% | 4 | 0.51% |
| PIKE | 170 | 20 | 21 | 211 | 1 | 0 | 0 | 0 | 0 | 0 | 212 | 1,349 | 15.72% | 1 | 0.47% |
| PLATTE | 360 | 19 | 5 | 384 | 0 | 0 | 0 | 0 | 0 | 0 | 384 | 6,855 | 5.60% | 0 | 0.00% |
| POLK | 393 | 83 | 23 | 499 | 2 | 1 | 0 | 0 | 0 | 0 | 502 | 2,402 | 20.90% | 3 | 0.60% |
| PULASKI | 400 | 39 | 6 | 445 | 0 | 0 | 0 | 0 | 0 | 0 | 445 | 4,660 | 9.55% | 0 | 0.00% |
| PUTNAM | 64 | 12 | 2 | 78 | 0 | 1 | 1 | 0 | 0 | 0 | 80 | 371 | 21.56% | 2 | 2.50% |
| RALLS | 128 | 21 | 5 | 154 | 0 | 0 | 0 | 0 | 0 | 0 | 154 | 768 | 20.05% | 0 | 0.00% |
| RANDOLPH | 269 | 71 | 43 | 383 | 5 | 1 | 1 | 0 | 0 | 0 | 390 | 1,921 | 20.30% | 7 | 1.79% |
| RAY | 384 | 37 | 27 | 448 | 0 | 0 | 0 | 0 | 0 | 0 | 448 | 1,735 | 25.82% | 0 | 0.00% |
| REYNOLDS | 56 | 26 | 14 | 96 | 2 | 1 | 0 | 0 | 0 | 0 | 99 | 476 | 20.80% | 3 | 3.03% |
| RIPLEY | 158 | 30 | 7 | 195 | 1 | 1 | 0 | 0 | 0 | 0 | 197 | 991 | 19.88% | 2 | 1.02% |
| SALINE | 342 | 92 | 22 | 456 | 5 | 1 | 0 | 0 | 0 | 0 | 462 | 1,781 | 25.94% | 6 | 1.30% |
| SCHUYLER | 65 | 19 | 7 | 91 | 1 | 0 | 0 | 0 | 0 | 0 | 92 | 344 | 26.74% | 1 | 1.09% |
| SCOTLAND | 35 | 25 | 5 | 65 | 0 | 0 | 0 | 0 | 0 | 0 | 65 | 470 | 13.83% | 0 | 0.00% |
| SCOTT | 635 | 71 | 14 | 720 | 1 | 1 | 0 | 0 | 1 | 0 | 723 | 3,304 | 21.88% | 3 | 0.41% |
| SHANNON | 49 | 21 | 6 | 76 | 1 | 0 | 0 | 0 | 0 | 0 | 77 | 638 | 12.07% | 1 | 1.30% |
| SHELBY | 131 | 20 | 18 | 169 | 4 | 1 | 0 | 0 | 0 | 0 | 174 | 519 | 33.53% | 5 | 2.87% |
| ST CHARLES | 2397 | 101 | 41 | 2,539 | 2 | 0 | 0 | 0 | 0 | 0 | 2,541 | 29,474 | 8.62% | 2 | 0.08% |
| ST CLAIR | 50 | 12 | 4 | 66 | 0 | 0 | 0 | 0 | 0 | 0 | 66 | 585 | 11.28% | 0 | 0.00% |
| ST FRANCOIS | 697 | 201 | 96 | 994 | 13 | 2 | 0 | 0 | 0 | 0 | 1,009 | 4,811 | 20.97% | 15 | 1.49% |
| ST LOUIS CO | 14197 | 1372 | 468 | 16,037 | 39 | 10 | 6 | 5 | 0 | 0 | 16,097 | 70,993 | 22.67% | 60 | 0.37% |
| ST LOUIS CITY | 9608 | 2630 | 1424 | 13,662 | 191 | 58 | 25 | 26 | 2 | 1 | 13,965 | 24,645 | 56.66% | 303 | 2.17% |
| STE GENEVIEVE | 231 | 37 | 12 | 280 | 1 | 0 | 0 | 0 | 0 | 0 | 281 | 1,239 | 22.68% | 1 | 0.36% |
| STODDARD | 434 | 48 | 7 | 489 | 0 | 0 | 0 | 0 | 0 | 0 | 489 | 2,171 | 22.52% | 0 | 0.00% |
| STONE | 225 | 26 | 16 | 267 | 0 | 0 | 0 | 0 | 0 | 0 | 267 | 1,694 | 15.76% | 0 | 0.00% |
| SULLIVAN | 179 | 20 | 12 | 211 | 1 | 0 | 0 | 0 | 0 | 0 | 212 | 528 | 40.15% | 1 | 0.47% |
| TANEY | 491 | 25 | 4 | 520 | 0 | 0 | 0 | 0 | 0 | 0 | 520 | 3,754 | 13.85% | 0 | 0.00% |
| TEXAS | 177 | 32 | 9 | 218 | 0 | 0 | 0 | 0 | 0 | 0 | 218 | 1,911 | 11.41% | 0 | 0.00% |
| VERNON | 148 | 47 | 17 | 212 | 2 | 1 | 0 | 1 | 0 | 0 | 216 | 1,754 | 12.31% | 4 | 1.85% |
| WARREN | 337 | 51 | 28 | 416 | 3 | 2 | 0 | 0 | 0 | 0 | 421 | 2,746 | 15.33% | 5 | 1.19% |
| WASHINGTON | 206 | 89 | 32 | 327 | 3 | 0 | 0 | 0 | 0 | 0 | 330 | 1,967 | 16.78% | 3 | 0.91% |
| WAYNE | 107 | 20 | 6 | 133 | 0 | 0 | 0 | 0 | 0 | 0 | 133 | 858 | 15.50% | 0 | 0.00% |
| WEBSTER | 274 | 37 | 17 | 328 | 0 | 0 | 0 | 1 | 0 | 0 | 329 | 3,219 | 10.22% | 1 | 0.30% |
| WORTH | 20 | 5 | 4 | 29 | 0 | 0 | 0 | 0 | 0 | 0 | 29 | 124 | 23.39% | 0 | 0.00% |
| WRIGHT | 250 | 27 | 11 | 288 | 1 | 0 | 1 | 0 | 0 | 0 | 290 | 1,569 | 18.48% | 2 | 0.69% |
| **Grand Total** | 72938 | 14582 | 4672 | **92,192** | 452 | 147 | 65 | 58 | 5 | 1 | **92,920** | **468,264** | **19.84%** | **728** | **0.78%** |

Data Notes:

-This table subtracts the full Kansas city population from Jackson county

# Activities Funded by the CLPPP Cooperative Agreement

## Contracts

St. Louis City, St. Louis County and Kansas City are Missouri's three largest metropolitan areas. According to 2010 census data and 2012 surveillance data, these three areas combined contain 60 % of Missouri's children with elevated blood lead levels (439 of 728). To decrease the prevalence of EBL's in these areas, DHSS contracts with LPHAs to provide lead poisoning prevention educational activities, assure case management, and provide environmental risk assessments.

Environmental contracts were established for nine regions of the state to assure that children with an EBL receive an accurate and timely environmental risk assessment. These contracts provide EBL risk assessments for 47 of the 114 counties and the city of St. Louis. DHSS Environmental Specialists provide EBL risk assessments in the remaining counties. Establishing regional contracts resulted in more complete and timely compliance with the conducting and reporting of risk assessments. Under the contracts, data is collected to track compliance with remediation recommendations.

## Lead Poisoning Prevention Education

CLPPP develops an educational campaign and distributes materials to advocates statewide each year. The campaign goal is to provide stakeholders with the tools necessary to promote lead poisoning prevention. Themes, fact sheets, posters and public service announcements are examples of campaign materials. The materials are used during lead poisoning prevention month to intensify the statewide effort. The *Lead-Free Kids for a Healthy Future* campaign flyers and posters were distributed to stakeholders statewide in 2011 and are archived on the CLPPP website: http://health.mo.gov/living/environment/lead/index.php.

CLPPP also develops and distributes a newsletter each year for local and state partners. The NewsLEADer contains resource information such as new publications available, websites and tips for successful public outreach. Stakeholders are encouraged to share their lead poisoning prevention activities and ideas. Several educational brochures and fact sheets that focus on specific lead related issues such as *Pregnancy and Lead Poisoning* and *A Health Care Provider's Guide to Lead Screening and Testing Requirements* are also available and can be ordered for community-wide use.

Educational materials are also available and displayed at health fairs, home shows, blood lead testing events and other public events when possible. Display boards provide visitors with lead poisoning prevention posters, signs, facts and other educational materials. The display boards are helpful to capture people's attention and draw them in to learn about other healthy homes topics such as radon and mold.

Lead Poisoning Prevention Week (observed in October) campaign information, newsletters, fact sheets, booklets and other publications are all available to the public on the CLPPP webpage.

The webpage also features: upcoming events, lead testing guidelines, Missouri lead testing maps, product recalls, data and statistical reports, laws, regulations and manuals.

# Collaborations

## Case Management Services

Case management of children with elevated blood lead levels involves coordinating, providing and overseeing the services required to help reduce the child's blood lead level. During FY2012, case managers strived to reduce EBL levels to less than 10 µg/dL. It is based on the efforts of an organized team and is child, physician and family centered. Lead case management services may be provided by the child's primary care physician, LPHA, a MO HealthNet Managed Care health plan, or another contracted agency. At times, other disciplines such as behavioral health are part of the case management system. In some cases interpretive services may be indicated and these individuals will also interact with lead case managers. DHSS Healthy Indoor Environments and Childhood Lead Poisoning staff along with MO HealthNet staff monitor case management for children identified with a blood lead level greater than or equal to 10 µg/dL. The MOHSAIC system is used to provide a centralized documented record of communications as well as case management interventions and updated demographic information. Risk assessment reports are also accessible to team members if the child's blood lead level was 15µg/dL or greater. This promotes increased information for consistency in sharing the findings and promoting unified support of suggested interventions made by the risk assessors following environmental investigation results.

## Environmental Services

The Missouri Public Health System provides lead risk assessment services to detect hazardous sources of lead exposure in children's homes. This service is provided for children age six and younger who have a confirmed venous blood lead level of 15µg/dL or greater.

A risk assessment is conducted by a professional trained and licensed by the DHSS Lead Licensing Program. The assessor consults with the child's family to determine areas of the home where the child may come into contact with lead. X-ray Fluorescence Analyzers (XRF's) are used to analyze painted surfaces and household objects such as toys and mini-blinds. Dust, soil and water samples are collected to determine if and where lead hazards exist. Upon completing the assessment and receiving the lab analysis, the risk assessor provides the property owner and/or occupant (if other than the owner) with recommendations for reducing lead hazards. The risk assessor revisits the home at an agreed-upon time to assure lead hazard reduction has been accomplished. The risk assessor collaborates with the child's parent or legal guardian, property owner, LPHA or MO HealthNet lead case manager, DHSS CLPPP staff, and the child's physician as indicated, as part of their role in case management of the elevated child.

## Healthy Homes

Since the beginning of the "Is Your Home Healthy?" exhibit in 2007, the exhibit has been adapted for use at a variety of events throughout the state. The main exhibit focuses on the Healthy Indoor Environments unit in the Bureau of Environmental Epidemiology. The primary programs highlighted are the Childhood Lead Poisoning Prevention Program and the Indoor Air/Radon Program. Information is available on a variety of topics including lead poisoning prevention, radon and mold remediation, the fish consumption advisory, asbestos-containing vermiculite insulation, carbon monoxide poisoning prevention, heat and cold illness prevention, mercury handling and disposal, and other environmental health topics as appropriate for the event and audience. Coloring and activity books, magnets and stickers are available to capture the interest

of guardians and children. Employees from the various programs staff the exhibit and are available to answer questions about environmental health concerns from citizens. The exhibit also features hand washing information from the Bureau of Communicable Disease Control and Prevention and tick and mosquito repellant information from the Vector Borne Disease Program.

Between July 1, 2011 and June 30, 2012, "Is Your Home Healthy?" was displayed at 21 different venues across the state. These included the new Local Public Health Administrators training, St. Louis and Jefferson City Home Builders Association Home Shows, Green Building Conference, Missouri Milk Food and Environmental Health Association Conference, Missouri School Nurse Conference, Missouri Educator Conferences, Parents as Teachers Conference, school and community health fairs and corporate employee health fairs.

The "Is Your Home Healthy?" exhibit is an ongoing collaborative effort between Bureau of Environmental Epidemiology programs, the Bureau of Communicable Disease Control and Prevention, the Vector Borne Disease Program, and the local health departments. This outreach effort continues to help build partnerships with outside organizations such as Parents as Teachers, child advocates, school nurses, contractors, environmental health professionals, senior citizen groups and parents. At the same time, it provides valuable information to and helps educate the citizens of Missouri about environmental hazards in their homes.

## Agency for Toxic Substance and Disease Registry (ATSDR)/Environmental Protection Agency (EPA)/Missouri Department of Natural Resources (MDNR)

Lead mining, milling and smelting has occurred throughout the lower half of Missouri. Missouri ranks as the top lead-producing state in the nation. Across the state, there are 60 counties that are potentially impacted by lead mining-related activities.

Historical lead mining, milling and processing has resulted in innumerable tons and acres of waste products, such as tailings and chat. Over time, tailings and chat have migrated into the surrounding communities. The migration has been caused by wind or water erosion, as well as from human activities, such as using the lead waste as fill material in yards, driveways and sandboxes or using the chat for traction along roads in winter. Because of the lead mine waste and the resulting contamination into nearby communities, Missouri has many sites placed on the Environmental Protection Agency (EPA) National Priorities List (NPL) for remediation. In St. Francois County, six large mine tailings and chat piles from past mining and milling operations are located near residential areas. Other major lead mining sites that have been placed on the NPL due to residential contamination include Madison and Jefferson counties; sites in Newton, Jasper and Iron counties; and four NPL sites in Washington County. In addition, there is an active lead smelter in Herculaneum, Missouri. The smelter processes lead concentrate from active mining and milling operations in nearby counties into lead ingots for use in consumer products like batteries and computers. Lead contamination resulting from the smelter operations is also being addressed in the community of Herculaneum.

DHSS, along with other state, local and federal agencies (including ATSDR, EPA, and DNR), is addressing these sites to protect public health. Multiple actions have been taken to reduce human exposure and prevent lead poisoning, especially to children less than six years old. Some of the actions taken by partnering agencies at the various sites to reduce exposure include monitoring of air, sampling of soil, water and dust, stabilization of the tailings piles, yard soil removals, street cleanings, interior home cleaning, reduction in smelter air emissions, and special blood lead

testing events. Additional activities conducted by DHSS include health studies, health consultations, public health assessments, and ongoing educational activities.

## Brownfield Project

Vast areas of Missouri may have high levels of lead in soil and/or groundwater due to naturally occurring lead deposits and from past and present lead mining and production. Given the recent rapid expansion of urban sprawl, many previously undeveloped properties are now being looked at by developers for residential housing and other types of increased land use. Development of this nature on mining-impacted lands potentially exposes new populations to lead and other heavy metal contaminants.

Under a grant from ATSDR, DHSS is developing a guide for Missouri communities to increase awareness and to encourage consistency among local governments in addressing public health implications associated with reuse and redevelopment of areas with potential mining contamination.

As another part of this project, DHSS has undertaken efforts to increase testing for lead in drinking water by working with the State Public Health Laboratory to add lead to its list of analytes included in the New Well Series for private drinking water supplies and by recommending actions that local public health agencies can take to increase testing. DHSS has also developed new health education materials to promote water testing for lead. To assist in responding to homeowner concerns for those identified with lead impacts to their drinking water system, a lead in drinking water fact sheet has been developed that can be provided along with test results with recommendations for reducing exposure. These health education materials can be found at the following DHSS web site: http://health.mo.gov/living/environment/lead/publications.php#gov

## DHSS Lead Licensing Program

The Lead Licensing Program is responsible for licensing individuals to conduct lead abatement, inspections and risk assessments. Employees of this section may make unannounced site visits to check that all individuals have the proper current license and also that lead abatement is being conducted correctly and safely. This is to ensure the safety of the residents who may not know the harmful effects of improper lead abatement work practices. Like CLPPP, the Lead Licensing Program plays an important role in keeping people healthy and safe from lead poisoning. All risk assessors that are a part of CLPPP are licensed and overseen by the Lead Licensing Program.

## Missouri Department of Social Services (MDSS), MO HealthNet Division (MHD)

Poverty is one major risk factor for lead poisoning. DHSS and MHD have had a cooperative agreement in place since 1998. This agreement outlines the agencies' mutual objectives regarding childhood lead poisoning to: 1) assure that MO HealthNet eligible children are screened/tested according to the Statewide Lead Testing Plan; and 2) assure that medically necessary services are provided for MO HealthNet eligible children whether by a MO HealthNet enrolled provider or MO HealthNet Managed Care health plan for the correction or amelioration of lead poisoning-related conditions identified through a full or partial Early Periodic Screening Diagnosis and Treatment. During FY2012, MO HealthNet staff assessed the current MO HealthNet status of all Missouri children with confirmed blood lead levels 10 µg/dL or greater. MO HealthNet staff generates a health plan specific report of elevated health plan members that is forwarded to each health plan lead case manager for case management of the elevation. Lead case management activities for these elevated health plan children are documented by the health plan lead case managers, directly into the MOHSAIC Lead Case Management Application. This

documentation helps to facilitate greater and timelier communication regarding follow up of elevated children among the MO HealthNet Managed Care health plans, Mo HealthNet Division, DHSS and the LPHAs. DHSS staff representation on the Central Area Headstart Advisory Committee provides opportunities for education and outreach regarding lead poisoning awareness and prevention activities in the community as well.

## Women, Infant, and Children (WIC) Program

High blood lead levels that affect intelligence, behavior and the development of children less than six years of age disproportionately affect minority and poor children. The Special Supplemental Nutrition Program for WIC is an important partner in efforts to combat the health risks of lead poisoning. By identifying high-risk children through a screening process during WIC clinic visits, referring children to their primary care provider for testing, or making blood lead testing available on-site, the likelihood that more children will be blood lead tested is improved. This practice also helps to identify elevated children, as well as initiate timely and appropriate follow-up care.

## Missouri Department of Economic Development (DED)

The Missouri Department of Economic Development FY 2008-2012 Consolidated Plan produced by DED includes Targeted and Universal Testing Area maps, blood lead testing data by county, and percentage of pre-1950 housing data for the state. The document also contains the Missouri Housing Development Commission's lead-based paint policies and procedures and the HOME Repair (HERO) Program's and HOME Rental Production Program's lead-based paint reference guide.

## Missouri Local Public Health Agencies (LPHA's)

Many LPHA's offer blood lead testing within their counties. Some agencies offer free blood lead testing or referrals to providers that offer testing. Most of these agencies have a nurse that assists with case management for children who have elevated lead levels; however, this nurse works in collaboration with the child's primary care physician, parent or guardian, managed health care plans if the child is enrolled, and environmental risk assessors. DHSS Healthy Indoor Environments and Childhood Lead Poisoning staff collaborates with LPHA staff on elevated lead cases to provide initial and ongoing technical assistance regarding lead case management activities, as well as environmental risk assessment. Lead poisoning education and outreach is often offered at the LPHA level at health fairs, through physician offices, childcare facilities and upon request. LPHA's utilize lead poisoning prevention campaigns to assist in raising community awareness regarding lead poisoning and its health effects. LPHA's are often a primary contact for parents of children attending childcare facilities where proof of lead testing is required. This is typically a convenient access point for lead testing and opportunity for provision of educational lead information to families as well. The DHSS Healthy Indoor Environments and Childhood Lead Poisoning Program also provides these agencies with educational materials and technical assistance for other related issues such as the use of the MOHSAIC application, lead case management training, current program and regulatory requirements. The support and ongoing efforts of the Local Public Health Agencies regarding childhood lead poisoning and its prevention play a key role in the primary goal to eliminate childhood lead poisoning.

For more information on lead poisoning prevention contact:

Missouri Department of Health and Senior Services
Bureau of Environmental Epidemiology
930 Wildwood Drive
Jefferson City, MO 65109
Phone: (573) 751-6102 or (866) 628-9891

Or visit our website at:
http://health.mo.gov/living/environment/lead/index.php